MYCOTAXON

Volume 110, pp. 383–385 *October–December 2009*

New records of smut fungi. 1. *Thecaphora hedysari*

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Abstract — *Thecaphora hedysari* is reported for the first time from Kyrgyzstan on a new host plant, *Hedysarum kirghisorum*. It represents the second known locality of *Thecaphora hedysari*.

Key words — taxonomy, *Ustilaginomycetes*

Introduction

In this series, novel findings of smut fungi will be recorded.

In this article, *Thecaphora hedysari* is reported as a new species for Kyrgyzstan, found on a new host plant, *Hedysarum kirghisorum*. It is the second known global location of this smut fungus.

Material and methods

Material from the herbarium of Komarov Botanical Institute, Russian Academy of Sciences, St Petersburg (LE) was examined under light microscope (LM) and scanning electron microscope (SEM). For LM observations, the spores were mounted in lactophenol solution on glass slides, gently heated to boiling point and then cooled. For SEM, the spores were attached to specimen holders by double-sided adhesive tape and coated with gold with an ion sputter. The surface structure of spores was observed at 10 kV and photographed with a JEOL SM-6390 scanning electron microscope.

A new record

Thecaphora hedysari Vánky, Trans. Mycol. Soc. Japan 32: 153, 1991. Figs 1–4

Sori in the fruits, destroying the seeds and replacing them with a spore mass. Infected fruits swollen. In the studied specimen, all collected fruits are

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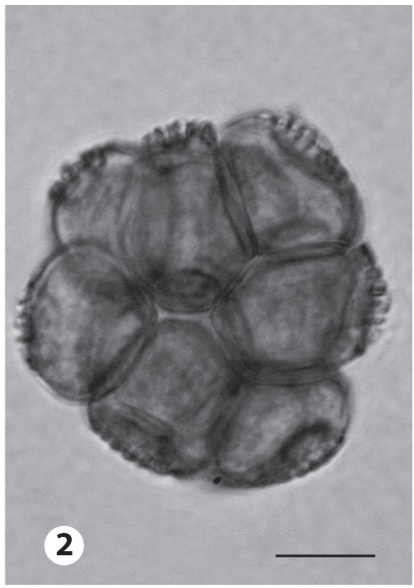

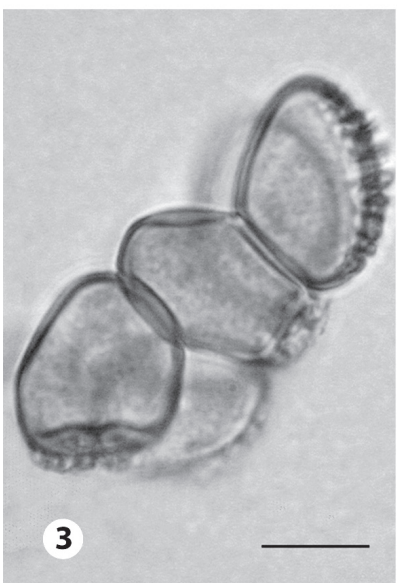

Figs 1–4. *Thecaphora hedysari* on *Hedysarum kirghisorum* (LE 261 758). 1. Part of a legumen with destroyed seeds. 2–3. Spores in LM. **4.** Spore ball in SEM. Scale bars: 1 = 1 cm, 2–4 = 10 μm.

infected; infection probably systemic. Spore mass granular, dark reddish brown (bay, based on the Colour identification chart of Anonymous 1969), composed of spore balls. Spore balls globose, subglobose, ovoid, broadly ellipsoidal to ellipsoidal, 35–79 × 31–62 µm, yellowish brown, composed of 10–40 (? more) spores, easily separating into single spores or small groups of spores. Spores in surface view irregularly and rounded polygonal, suborbicular or broadly elliptical in outline, 16.5–23 × 14.5–18 µm; in lateral view more or less cuneate (usually, rounded or truncate-cuneate at the base), broadly elliptical, suborbicular or irregularly and rounded elongated in outline, 12.5–26 µm long (including the ornaments), 12.5–24.5 µm width; yellowish brown; wall smooth on the contact surfaces, 0.8–1.2 µm thick, coarsely verrucose on the free surface; warts densely situated, up to 1.6 (–2) µm high.

Specimens examined — On *Hedysarum kirghisorum* B. Fedtsch.: KYRGYZSTAN, the Issyk-Kul hollow, W of Karakul Lake, 11 June 1965, leg. N.A. Gorbunova (LE 261 758, SOMF 27 697).

Distribution. On *Fabaceae: Hedysarum,* Central Asia.

Comments — *Thecaphora hedysari* has been previously reported only from the type locality (Mongolia, the Mongolian Altai Mts), on *Hedysarum ferganense* Korsh. (Vánky 1991). That smut fungus is a rare species and deserves an IUCN threatened status, globally assessed here as Data Deficient. *Hedysarum kirghisorum* is distributed in Kyrgyzstan, Kazakhstan, and China. The type host plant also has a Central Asian distribution.

Acknowledgements

We gratefully acknowledge Dr Kálmán Vánky (Herbarium *Ustilaginales* Vánky, Tübingen, Germany) and Dr Roger G. Shivas (Queensland Primary Industries and Fisheries, Australia) for critically reading the manuscript and serving as pre-submission reviewers. The financial support from the Bulgarian National Science Fund (grant no. DO 02-181/2008) is gratefully acknowledged.

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